

REMARKS

This Amendment is submitted in reply to the non-final Office Action mailed on December 2, 2009. A petition for a two month extension of time is submitted herewith. The Director is authorized to charge \$490.00 for the petition for a two month extension of time and any additional fees that may be required, or to credit any overpayment to Deposit Account No. 02-1818. If such a withdrawal is made, please indicate the Attorney Docket No. 3712036-753 on the account statement.

Claims 1-21 are pending in this application. Claims 9-11 and 15-19 were previously withdrawn. In the Office Action, Claims 2-3 and 13 are objected to; Claims 5 and 13 are 35 rejected under 35 U.S.C. §112; and Claims 1-8, 12-14 and 20-21 are rejected under 35 U.S.C. §102. In response, Claims 1, 5 and 12-14 have been amended. The amendments do not add new matter. In view of the amendments and/or for the reasons set forth below, Applicants respectfully submit that the rejections should be withdrawn.

In the Office Action, Claims 2-3 and 13 are objected to. In this regard, the Patent Office asserts that Claims 2-3 and 13 are improper because certain species of the genuses listed in the Markush groups of Claims 2-3 and 13 can fall into several genuses of the Markush group. Applicants respectfully disagree and submit that there is no requirement that each genus must include species that are mutually exclusive from every other genus in the Markush group. In fact, it would be impossible to list genuses in a Markush group because this would likely always be the case. Rather, the test is that the skilled artisan understands the scope of the genuses of the Markush group. Applicants have listed genuses in the Markush group having a scope that can clearly be understood by the skilled artisan (e.g., vegetables, leaves, flowers, fruits, etc./a liquid drink, a soup, a dietary supplement, etc.). Having species that could be listed in several different genuses does not render the scope of the claims unclear. Accordingly, Applicants respectfully request that the objection to the claims be reconsidered and withdrawn.

In the Office Action, Claims 5 and 13 are rejected under 35 U.S.C. §112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. In response, Claims 5 and 13 have been amended to address the informalities cited by the Patent Office. Based on at least these noted reasons, Applicants believe that Claims 5 and 13 fully comply with 35 U.S.C. §112,

second paragraph. Accordingly, Applicants respectfully request that the rejection of Claims 5 and 13 under 35 U.S.C. §112 be withdrawn.

In the Office Action, Claims 1-8, 12-14 and 20-21 are rejected under 35 U.S.C. §102(b) as being anticipated by JP 09107880 to Osanai ("*Osanai*") as evidenced by the printed publications to Edenharder et al. ("*Edenharder*"), Faulks et al. ("*Faulks*") and Hovari et al. ("*Hovari*"). Applicants respectfully traverse the rejection for at least the reasons set forth below.

Independent Claims 1, 12 and 14 have been amended to recite, in part, a primary composition at least essential lipophilic and hydrophilic bioactive components of a material selected from the group consisting of whole fruit, vegetable and plant material, excluding insoluble fibers, wherein the essential lipophilic and hydrophilic bioactive components are extracted from the material by milling the material in the milk or milk protein-containing carrier and the insoluble fibers are removed by centrifuging the carrier after milling. The amendments are supported in the specification, for instance, at Examples 1-2 and 6-7. In contrast, Applicants respectfully submit that the cited references fail to disclose or suggest each and every element of the present claims.

As taught by Applicants' specification, essential bioactive components extracted from fruits or plant materials are well-known and widely used in the food industry. However, conventional techniques for extracting such bioactive components only extract some of the bioactive components from the fruit or plant material. For example, water extraction techniques, in which the bioactive components are extracted from insoluble fibers, preserve the natural image and nutritional functions of the bioactive components but are not very efficient. Solvent extraction techniques, while more efficient than water extraction, still fail to extract a substantial portion of the bioactive components from the fruit or plant material and simultaneously impair the nutritional functions of the bioactive components. See specification, page 1, line 23-page 2, line 28. Therefore, traditional water and solvent extraction techniques are only able to extract a few compounds of the fruit or plant material, leaving some other bioactive materials in the remaining material. For example, polysaccharides, polyphenols and other non-lipophilic compounds are not extracted together with the lipophilic components such as carotenoids, lipophilic vitamins and other lipids.

The essential bioactive components of the present claims are extracted from fruits or plant materials by milling the material in a milk or milk protein-containing carrier. Milling the

material contained in the milk or milk protein-containing carrier allows for the formation of much smaller particles of ground plant material, allowing more efficient access by the milk or milk protein-containing carrier to both the water-soluble and oil-soluble bioactives of the plant material. Moreover, centrifuging the milk or milk protein-containing carrier after milling of the fruit or plant materials removes the insoluble fibers and allows the essential lipophilic and hydrophilic bioactive components to have improved bioavailability and miscibility in the milk or milk protein-containing carrier.

The present compositions, thus, are produced by processes that allow for the extraction of a greater amount of bioactive materials than with traditional water or solvent extraction techniques. The fruit or plant material is mixed in a milk or milk protein-containing medium and separated from insoluble fibers to obtain an aqueous suspension. By using a milk or milk protein-containing carrier to extract the bioactive components from the fruit or plant material and centrifuging the milk or milk protein-containing carrier, the present claims provide bioactive components with improved miscibility, stability and bioavailability over conventional extraction techniques without the use of organic solvent residues. See specification, page 3, lines 19-page 4, line 10; page 7, lines 5-12. By using milk or milk proteins, soy-milk or milk-like proteins from plants, the primary composition of the present invention provides a similar profile of the important nutrients like the whole fruit. Furthermore, by also removing the insoluble fibers through centrifugation, the primary composition of the present claims can be efficiently produced. See specification, page 4, lines 1-3.

The cited references fail to disclose or suggest a primary composition wherein the essential lipophilic and hydrophilic bioactive components are extracted from the material by milling the material in the milk or milk protein-containing carrier and the insoluble fibers are removed by centrifuging the carrier after milling as required by independent Claims 1, 12 and 14. In fact, nowhere do the cited references teach centrifuging a milk or milk protein-containing carrier to removing insoluble fibers after milling. As a result, the cited references fail to disclose or suggest a primary composition comprising at least essential lipophilic and hydrophilic bioactive components of a material selected from the group consisting of whole fruit, vegetable and plant material and excluding insoluble fibers in accordance with the present claims.

Accordingly, Applicants respectfully request that the rejection of the pending claims under 35 U.S.C. §102(b) be reconsidered and withdrawn.

For the foregoing reasons, Applicants respectfully request reconsideration of the above-identified patent application and earnestly solicit an early allowance of same. In the event there remains any impediment to allowance of the claims that could be clarified in a telephonic interview, the Patent Office is respectfully requested to initiate such an interview with the undersigned.

Respectfully submitted,

K&L GATES LLP

BY 

Robert M. Barrett
Reg. No. 30,142
Customer No.: 29157
Phone No. 312-807-4204

Dated: April 14, 2010